

AMENDMENTS TO THE SPECIFICATION

Please replace Paragraph [0014] on Page 5 with the following paragraph:

[0014] Fluid to bypass port 30 is controlled by a flow control valve 38 slideably received in bore 34. Valve 38 comprises a peripheral surface 40 that includes lands and grooves for providing a slideable seal with the bore. Valve 38 is adapted to axially slide between an open position shown in Fig. 1 wherein fluid discharge port 20 and fluid bypass port 30 communicate through bore 34 for recycling a portion of the fluid through the bypass port, and a fully closed position shown in Fig. 2 wherein bypass port 30 is closed by valve 38, so that the entire volume of pumped fluid is directed to output 28. Valve 38 and bypass port 30 cooperate to define to an opening to J the bypass port. It is an advantage of this invention that the valve may be moved to a position intermediate the closed position and the fully retracted position. In this manner, the size of the opening to the bypass port may be varied to increase or decrease the fluid flow into the bypass port. By varying the proportion of fluid flow to the bypass port, output 28 from the pump may be adjusted to a desired volume.

Please replace Paragraph [0015] on Page 5 with the following paragraph:

[0015] In accordance with this invention, valve 38 is opened and closed by a solenoid assembly 50 that includes an actuator 52 responsive to an electromagnetic field applied by an electromagnetic coil 54. Solenoid assembly 50 includes a bracket 56 for mounting the assembly to housing 12 at an end of bore 34 opposite outlet passage 27. Actuator 52 is axially slideably received in a tubular sleeve extension 58 fixed to bracket 56. Extension 58 is sealed by an end cap 60, thereby sealing actuator 52 within the extension. Actuator 52 is connected to valve 38 by a rod 62 that extends through bracket 56. Rod 62 includes a central axial passage 64 that communicates with a central axial passage 66 through plunger 52 for equalizing fluid pressure to facilitate movement of plunger 52 during opening and closing of valve 38. Although not shown

in the depicted embodiment, end cap 60 may include a pressure transducer for monitoring fluid pressure within bore 34 through passages 64 and 66. A coil spring 68, about rod 62 between bracket 56 and actuator 52, biases the actuator against end plug 60 to thereby bias valve 38 in the open position. Actuator 52 is preferably formed of iron or other suitable magnetizable material, whereas extension 58, end plug 60 and coil 68 are preferably formed of aluminum or other material that is not affected by an applied electromagnetic field. Electromagnetic coil 54 includes terminal 70 protected by shield 72 for connection to an external electrical power source.

Please replace Paragraph [0016] on Page 6 with the following paragraph:

[0016] Prior to operation, valve 38 is biased in the open position shown in Fig.

1. In the open position, coil spring 68 is extended to bias actuator 52 so that its the rear end 80 abuts end cap 60.

Please replace Paragraph [0017] on Page 6 with the following paragraph:

[0017] During operation, rotor 14 is driven by the engine of the automotive vehicle through a belt and pulley arrangement. The pumping elements, rotors 14, vane 26 and cam chamber 18, are preferably sized so that, at low engine speeds, the volume of pumped fluid is equal to the desired output 28 of pump 10. Under these circumstances, it is desired that no portion of the pumped fluid be returned through bypass port 30. This is accomplished by positioning valve 38 to close bypass port 30 from fluid communication with fluid discharge port 20, as shown in Fig. 2. To close valve 38, electrical current is conducted through coil 54 through